ENVIRONMENTAL MANAGEMENT COMMISSION

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Benne C. Hutson
Chairman
Kevin Martin
Vice Chairman

Pat McCrory, Governor
John Skvarla, Secretary

David W. Anderson
Gerard P. Carroll
Charles Carter
Tommy Craven
Daniel E. Dawson
Charles B. Elam
E. O. Ferrell
Manning Puette
Dr. Lawrence W. Raymond
Dr. Albert R. Rubin
Clyde E. Smith, Jr.
Steve W. Tedder
Julie A. Wilsey

October 14, 2014

VIA ELECTRONIC AND REGULAR MAIL

Marion Hopkins
U.S. Environmental Protection Agency, Region 4
Water Protection Division
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

Subject: Comments of North Carolina Environmental Management Commission and North Carolina Department of Environment and Natural Resources, Division of Water Resources on the U.S. Environmental Protection Agency Decision to Add 52 Waterbody-Pollutant Combinations to North Carolina's 2014 Section 303(d) List

Dear Ms. Hopkins:

The North Carolina Environmental Management Commission (EMC) and North Carolina Department of Environment and Natural Resources, Division of Water Resources (DWR) have reviewed your July 31 letter partially approving North Carolina's 2014 303(d) list. We appreciate EPA's approval of the state's list as submitted. However, we disagree with EPA's decision to add 52 waterbody-pollutant combinations to the impaired waters list and ask that EPA fully approve the 303(d) list as submitted based on the following reasons.

EPA's Decision Improperly Intrudes on Responsibilities Reserved to the States

The Clean Water Act (CWA) carefully and specifically carves out for the states certain responsibilities. Among those are the establishment of water quality standards (33 U.S.C. section 1313(c), 40 C.F.R. section 131.20) and impaired waters listing decisions (33 U.S.C. section 1313(d), 40 C.F.R. 130.7(b)).

As to 303(d) listing decisions, the states are responsible for defining the protocol for determining attainment and non-attainment of water quality standards in individual waters and then identifying impaired and unimpaired waters based on good cause, and accurate data and modeling. EPA has an important role in the process but that role is limited to determining that the states' approaches are consistent with the Clean Water Act.

We respectfully submit that EPA's decision that 52 additional waterbody-pollutant combinations should be listed goes beyond its responsibilities and authority under the Clean Water Act.

EPA's Decision Improperly Rejects North Carolina's Approved Listing Methodology

EPA proposes to add the 52 waterbody-pollutant combinations to North Carolina's 303(d) list on the grounds that "EPA has not determined that the State's methodology is a reasonable method to assess toxic or non-conventional pollutants consistent with the State's currently applicable, EPA-approved water quality standards." All such water quality standards have safety factors and incorporate appropriate levels for aquatic life protections whether pollutants are conventional or toxic.

The "methodology" that EPA refers to is one that was developed by DWR with significant input and ultimate approval by the EMC after months of effort and discussion, including the involvement of interested stakeholders. A fundamental principle underlying this methodology was that there be sufficient quality data to have a 90% confidence level that 10% of samples exceed a water quality standard. As part of the 2014 303(d) list development, DWR staff used this EMC-approved methodology to reclassify the 52 waterbody-pollutant combinations at issue to Category 3a (inconclusive) and remove them from the 303(d) list.

EPA proposes to place the 52 waterbody-pollutant combinations back onto the 303(d) list using a greater than 1 exceedance in 3 years (">1-in-3") listing methodology. The EMC and DWR disagree with the use of this listing method and believe that it is inappropriate for assessment of toxic substances on the 2014 303(d) list for a number of reasons.

The >1-in-3 Listing Method Ignores the Importance of Sample Size

The National Research Council has recommended that EPA endorse statistical approaches, such as the binomial hypothesis test that North Carolina utilizes, "that can more effectively make use of the data collected to determine water quality impairment than does the raw score approach." Such approaches help to manage Type 1 and Type 2 error rates, take into account sample sizes, establish the confidence level associated with the assessment, and address sampling and analytical errors and non-representative sampling bias. These approaches also quantitatively help to inform the public of the level of confidence provided by sampling data based on the number of observations and are superior to making listing decisions on a raw score basis that could have less than a 50 percent confidence level.

Like the raw score method, the >1-in-3 listing methodology is problematic because it does not take into account the importance of sample size. While the raw score method at least considers the proportion of samples that exceed water quality standards, the >1-in-3 listing methodology does not. Larger datasets are more likely to include samples collected during brief extremes, such as the "first flush" of stormwater, which are too short-lived to impact the biological community. In determining whether a stream is impaired, DWR and the EMC believe it is essential to take sample size into account.

EPA Lacks Legal Authority to Impose the >1-in-3 Listing Method

The >1-in-3 listing method is not mandated by the Clean Water Act. It has not gone through the public safeguards of notice and comment rulemaking and has not been published as an enforceable regulation. In short, the >1-in-3 listing method is not a binding legal requirement that EPA can impose upon North Carolina or any other state.

North Carolina's 10% Probability Value/90% Confidence Level is Appropriate for Determining Impairment by Toxic Substances and Non-Conventional Pollutants

The 10% Probability Value is Necessary and Appropriate

North Carolina's methodology includes the application of a 10% probability value to toxic pollutants to prevent occasional exceedances form the "first flush" of stormwater and diurnal fluctuations (observed for some toxic substances) from triggering unwarranted 303(d) listings. This is consistent with the accepted statistical approaches and accounts for any sampling and analytical errors to which toxics data might be prone.

Current North Carolina criteria are for total metals and are stated as "not to exceed." The >1-in-3 approach is designed for dissolved metals with chronic and acute criteria and averages over a prescribed time period. Applying this method to current North Carolina data is not appropriate. However, the EMC is in the process of changing metals criteria and will subsequently adopt listing methods to properly assess the metals criteria. Until those standards changes are adopted, the use of North Carolina's current approach is more appropriate.

The 90% Confidence Level is Necessary and Appropriate

A confidence level is the probability that sample data with a given number of criteria exceedances could be drawn from an overall population for the water segment where the overall exceedance probability is the intended 10%. Use of confidence levels helps identify when a sufficient number of exceedances have occurred that indicate a true exceedance rate of > 10%. This helps address concerns about outliers, minimum data sets, borderline impairment background conditions, collection mishandling, calibration errors, potential laboratory errors, etc. Modern statistics strongly recommends the use of confidence values.

Confidence limits used on data for the 2014 303(d) list helped North Carolina ensure data validity. The EMC and DWR believe that using a confidence level strengthens the list substantially. It helps address concerns with outliers, minimum sample size, borderline impairments, background conditions, sample contamination and mishandling, calibration errors and unintended laboratory errors. The EMC and DWR believe that the listing methodology used to generate North Carolina's 2014 303(d) list was properly designed and implemented.

Expedited Sampling of the 52 Waterbodies

DWR commits to expediting sampling at the 52 waterbody locations to provide data sufficient to remove them from Category 3a (inconclusive) into the appropriate category as supported by the data.

Conclusion

Listing a waterbody-pollutant combination as impaired has significant consequences. It can raise concerns among the public as to whether it is safe to swim or fish. It can hinder efforts by local and State governments to attract people or businesses to move to an area.

EPA's proposed >1-in-3 approach is an inappropriate methodology for North Carolina's 2014 assessment as it ignores critical factors such as size of the data set, confidence levels, and management of Type 1 and Type 2 error rates.

The EMC and DWR believe that the listing methodology used to generate North Carolina's 2014 303(d) list was properly designed and implemented. Furthermore, that design and implementation is specifically a state responsibility which EPA must respect and honor. For the reasons stated in this letter, the EMC and DWR request that EPA not add the 52 waterbody-pollutant combinations to the 2014 303(d) list.

Sincerely,

Benne C. Hutson, Chair
North Carolina Environmental Management Commission

Thomas A. Reeder, Director
Division of Water Resources
North Carolina Department of Environment and Natural Resources

cc: James Giattina, Director,
Water Protection Division,
EPA Region 4

Mitch Gillespie, Assistant Secretary,
NCDENR